

CLAIMS

The following is claimed:

1 1. A system for improving communication between a switched network and a packet
2 network, comprising:

3 a signaling gateway for converting signaling in a first protocol to a second protocol, and
4 from said second protocol to said first protocol;

5 at least one media gateway for converting multimedia provided in a first format into a
6 second format, and from said second format into said first format;

7 a session router for selecting at least one multimedia transmission route to a destination,
8 said destination being specified by said switched network; and

9 a media router for guiding said multimedia to said destination after conversion by said
10 media gateway.

1 2. The system of claim 1, wherein said first format is a time division multiplexing
2 format and said second format is a real time protocol format.

1 3. The system of claim 1, wherein said media gateway does not determine the
2 destination of said multimedia.

1 4. The system of claim 1, wherein said first protocol is signaling system number
2 seven and said second protocol is a session Internet protocol.

- 1 5. The system of claim 1, wherein said second protocol is real time protocol.
- 1 6. The system of claim 1, wherein said packet network is an Internet protocol
2 network.
- 1 7. The system of claim 1, wherein said switched network is a public switched
2 telephone network.
- 1 8. The system of claim 1, wherein said first format is a time division multiplexing
2 format.
- 1 9. The system of claim 1, wherein said second format is a real time protocol format.
- 1 10. The system of claim 1, wherein said switched network communicates with said
2 signaling gateway via use of signaling system number seven.
- 1 11. The system of claim 1, wherein said signaling gateway comprises a memory that
2 may be utilized for converting a received circuit identification code into a session description
3 protocol header.

1 12. The system of claim 11, wherein said session description protocol header is
2 utilized by said destination, located within said packet network, to direct data packets to said
3 media gateway.

1 13. The system of claim 11, wherein said session description protocol header
2 comprises an Internet protocol address and port for said destination.

1 14. The system of claim 1, wherein communication between said session router and
2 said signaling gateway is performed via use of session Internet protocol signaling.

1 15. A method for establishing a call from a switched network to a user agent within a
2 packet network, comprising the steps of:

3 transmitting an initial address message from said switched network to a signaling
4 gateway;

5 converting at said signaling gateway said initial address message to a session Internet
6 protocol invite message;

7 transmitting said Internet protocol invite message to a session router, which analyzes said
8 Internet protocol invite message to determine a best route to said user agent; and

9 opening a media router address and port, within a media router, for multimedia
10 transmission from said user agent to said switched network, as a result of a request from said
11 session router.

1 16. The method of claim 15, wherein said switched network is a public switched
2 telephone network.

1 17. The method of claim 15, wherein said initial address message comprises a circuit
2 identification code that identifies a bearer channel reserved by said switched network to
3 communicate with said user agent.

1 18. The method of claim 15, wherein said initial address message comprises
2 information regarding a calling party, a called party and a circuit identification code, wherein
3 said information is converted by said signaling gateway to a from header, a to header, and a
4 session description protocol header respectively.

1 19. The method of claim 18, wherein said session description protocol header
2 comprises an Internet protocol address and port for said user agent to transmit multimedia.

1 20. The method of claim 15, further comprising the steps of:
2 transmitting said invite message from said session router to said user agent, wherein said
3 invite message comprises said media router address and port, and transmitting a circuit
4 identification code that identifies a bearer channel reserved by said switched network to
5 communicate with said user agent, thereby providing said user agent with the capability of
6 communicating with said switched network.

21. The method of claim 20, further comprising the steps of:

designating a user agent address and port within said user agent for receiving multimedia transmitted from said switched network;

designating a second address and second port for receiving said multimedia transmitted from said switched network;

transmitting said second address and second port to said signaling gateway; and

transmitting said second address and second port, and said user agent address and port, to said signaling gateway.

22. The method of claim 21, further comprising the steps of:

transmitting said multimedia from said switched network to a media gateway;

converting said multimedia from a first format to a second format;

transmitting said multimedia to said media router via said designated second address and second port; and

transmitting said multimedia to said user agent via said designated user agent address and port.

1 23. A method for discontinuing a connection between a user agent, located within a
2 packet network, and a switched network, wherein said discontinuation is initiated by said user
3 agent, comprising the steps of:

4 requesting discontinuation of said connection to said switched network, wherein said user
5 agent request is transmitted to a session router, said session router being capable of selecting at
6 least one multimedia transmission route to said user agent;

7 requesting discontinuation of said connection, wherein said session router request is
8 transmitted to a media router, said media router being capable of guiding multimedia to said user
9 agent; and

10 unbinding at least one prior established address and port utilized for providing said
11 connection between said user agent and said switched network.

12 24. The method of claim 23, further comprising the step of transmitting said
13 discontinuation to said switched network, which, in turn, releases a bearer channel utilized for
providing said connection between said user agent and said switched network.

1 25. A method for discontinuing a connection between a user agent, located within a
2 packet network, and a switched network, wherein said discontinuation is initiated by said
3 switched network, comprising the steps of:

4 requesting discontinuation of said connection between said user agent and said switched
5 network, wherein said switched network request is transmitted to a signaling gateway, said
6 signaling gateway being capable of converting signaling in a first protocol into a second
7 protocol, and from said second protocol to said first protocol;

8 requesting discontinuation of said connection, wherein said signaling gateway request is
9 transmitted to a session router, said session router being capable of selecting at least one
10 multimedia transmission route to said user agent;

11 requesting discontinuation of said connection, wherein said session router request is
12 transmitted to a media router, said media router being capable of guiding multimedia to said user
13 agent; and

14 unbinding at least one prior established address and port utilized for providing said
15 connection between said user agent and said switched network.

1 26. The method of claim 25, wherein said first protocol is signaling system number
2 seven and said second protocol is session Internet protocol.

1 27. A method for discontinuing a connection between a user agent, located within a
2 packet network, and a switched network, wherein said discontinuation is initiated by a media
3 router, said media router being capable of guiding multimedia to said user agent, comprising the
4 steps of:

5 requesting discontinuation of said connection between said user agent and said switched
6 network, wherein said media router request is transmitted to a session router, said session router
7 being capable of selecting at least one multimedia transmission route to said user agent;

8 unbinding at least one prior established address and port utilized for providing said
9 connection between said user agent and said switched network; and

10 discontinuing signaling associated with communication between said switched network
11 and said user agent.

1 28. A method for establishing a call from a user agent to a switched network, the user
2 agent initiating the call, the user agent being located within a packet network, the method
3 comprising the steps of:

4 transmitting an invite message from said user agent to a session router, wherein said
5 session router is capable of selecting at least one multimedia transmission route to said user
6 agent, said invite message providing a from address and a destination address within said
7 switched network;

8 transmitting an invite message to a signaling gateway identifying an Internet protocol
9 address of said session router and said destination address within said switched network, said
10 signaling gateway being capable of converting signaling in a first protocol into a second
11 protocol, and from said second protocol to said first protocol;

12 transmitting a request for an address and port within said media router to be dedicated to
13 transmission of said multimedia between said user agent and said switched network; and

14 binding an address and port within said media router for user agent multimedia
15 transmission .

1 29. The method of claim 28, wherein said from address further comprises an Internet
2 protocol address and port of said user agent.

1 30. The method of claim 28, further comprising the step of allocating a circuit within
2 a media gateway for use in transmitting multimedia between said user agent and said switched
3 network, said media gateway being capable of converting multimedia provided in a first format
4 into a second format, and from said second format into said first format.

1 31. The method of claim 28, wherein said first protocol is signaling system number
2 seven and said second protocol is session Internet protocol.

1 32. A system for improving communication between a switched network and a packet
2 network, comprising:

3 means for converting signaling from a first protocol to a second protocol and from said
4 second protocol to said first protocol;

5 means for converting multimedia from a first format to a second format, and from said
6 second format to said first format;

7 means for selecting at least one multimedia transmission route to a destination, said
8 destination specified by said switched network; and

9 means for guiding said multimedia to said destination after conversion by said means for
10 converting multimedia.

1 33. The system of claim 32, wherein said first format is a time division multiplexing
2 format and said second format is a real time protocol format.

1 34. The system of claim 32, wherein said means for converting multimedia provided
2 in a first format into a second format, and from said second format into said first format, does not
3 determine the destination of said multimedia.

1 35. The system of claim 32, wherein said first protocol is signaling system number
2 seven and said second protocol is session Internet protocol.

1 36. The system of claim 32, wherein said second protocol is real time protocol.

1 37. The system of claim 32, wherein said packet network is an Internet protocol
2 network.

1 38. The system of claim 32, wherein said switched network is a public switched
2 telephone network.

1 39. The system of claim 32, wherein said first format is a time division multiplexing
2 format.

1 40. The system of claim 32, wherein said second format is a real time protocol
2 format.

1 41. The system of claim 32, wherein said switched network communicates with said
2 signaling gateway via use of signaling system number seven.

1 42. The system of claim 32, wherein said means for converting signaling in a first
 2 protocol into a second protocol, and from said second protocol to said first protocol, further
 3 comprises a means for storing that may be utilized for converting a received circuit identification
 4 code into a session description protocol header.

1 43. The system of claim 42, wherein said session description protocol header is
 2 utilized by said destination located within said packet network to direct data packets to said
 3 means for converting multimedia.

1 44. The system of claim 42, wherein said session description protocol header
 2 comprises an Internet protocol address and port for said destination located within said packet
 3 network.